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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,279	04/06/2001	Kevin J. Negus	021775-099	6342

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EXAMINER

VOLPER, THOMAS E

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/828,279

Applicant(s)

NEGUS, KEVIN J.

Examiner

Thomas Volper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/15/04.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 9/30/04, 10/29/04.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-5, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravishankar et al. (US 6,778,509) in view of Semper et al. (US 6,546,001).

Regarding claims 1 and 9, Ravishankar discloses a TCP layer providing for TCP layer acknowledgments (col. 13, lines 11-24). The TCP layer acknowledgments are buffered by the wireless MAC layer and appended to a MAC header (col. 13, lines 30-37). Ravishankar fails to expressly disclose that the wireless MAC layer provides for MAC layer acknowledgments and that the TCP acknowledgements are appended to a MAC layer acknowledgment of another MAC layer message. Semper discloses a wireless MAC layer for providing MAC layer acknowledgements (col. 2, lines 15-32). Semper also discloses that the MAC layer acknowledgements may be "piggybacked" with MAC messages (col. 6, line 62 – col. 7, line 3). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to append a TCP layer acknowledgement of Ravishankar to a MAC header that contained a MAC layer acknowledgement. One of ordinary skill in the art would have been motivated to do this because TCP data and/or acknowledgements are encapsulated in the MAC layer, therefore they are sent with a MAC header. It is more efficient to send a MAC layer

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acknowledgement with encapsulated TCP data and/or acknowledgements, rather than sending it by itself.

Regarding claim 3, Ravishankar discloses that the radio interface supports an asymmetric mode of traffic (col. 7, lines 12-17). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to perform the aforementioned appending of a TCP acknowledgement to a MAC acknowledgement during the asymmetric mode of traffic of Ravishankar. One of ordinary skill in the art would have been motivated to do this in order to benefit from the greater efficiency of the appended acknowledgements.

Regarding claim 4, Ravishankar discloses that the downlink does not need to contend for the medium (col. 7, lines 12-17).

Regarding claim 5, Ravishankar discloses a downlink from the gateway station (101), which meets the limitation of a node, to a user terminal (103) (col. 5, lines 24-39). Ravishankar also discloses sending the TCP acknowledgments from the user terminal in response to messages received on the downlink (col. 12, lines 47-63).

3. Claims 2, 6, 7, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravishankar et al. (US 6,778,509) in view of Semper et al. (US 6,546,001) as applied to claims 1, 3-5, and 9 above, and further in view of Applicant's Admitted Prior Art (AAPA).

Regarding claims 2 and 10, Ravishankar in view of Semper fails to expressly disclose that the MAC layer is a modified CSMA/CA layer. AAPA discloses using a CSMA/CA protocol at the MAC layer (page 1, lines 8-10 of the Specification). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a CSMA/CA protocol at

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the MAC layer in the system provided by Ravishankar in view of Semper. One of ordinary skill in the art would have been motivated to do this in order to avoid collisions on the medium.

Regarding claims 6, 7, and 11, the system provided by Ravishankar in view of Semper discloses sending a MAC layer acknowledgment with appended TCP data and/or a TCP acknowledgement. Ravishankar in view of Semper fails to expressly disclose sending an acknowledgement, more specifically a MAC layer acknowledgement to acknowledge reception of a TCP layer acknowledgement. AAPA discloses sending a MAC acknowledgement in response to receiving a TCP layer acknowledgement (see Figure 2A). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to send a MAC layer acknowledgement in response to a TCP layer acknowledgement. One of ordinary skill in the art would have been motivated to do this in order to provide the sender of the TCP layer acknowledgement confirmation of reception of that acknowledgement, thus avoiding a retransmission.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ravishankar et al. (US 6,778,509) in view of Semper et al. (US 6,546,001) as applied to claims 1, 3-5, and 9 above, and further in view of Kalliokulju et al. (US 6,553,006).

Regarding claim 8, Ravishankar in view of Semper fails to expressly disclose sending a TCP acknowledgement only when the link quality is very good. Kalliokulju discloses using acknowledged data transmission only when the link quality provided is reliable (col. 2, lines 46-65). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide TCP acknowledgements in the system provided by Ravishankar in view

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of Semper only when the link quality is good. One of ordinary skill in the art would have been motivated to do this in order to reserve system resources when a particular connection did not require the reliability provided by acknowledged data transmission.

Conclusion

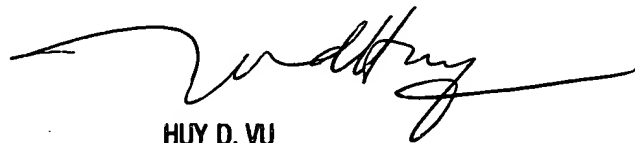
5. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is (571) 272-3151. The examiner can normally be reached between 8:30am and 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at (571) 272-3155. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Thomas E. Volper

TEV

November 11, 2004



HUY D. VU
SUPERVISORY PATENT EXAMINER
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